# NATIONAL SYSTEMATICS LABORATORY REPORT FOR CALENDAR YEAR 1987

Washington, D.C.

May 1988

LIBRARY

JUN 17 1988

National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii

U.S. DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

National Marine Fisheries Service

# ANNUAL REPORT
# NATIONAL SYSTEMATICS LABORATORY
# CALENDAR YEAR 1987

Washington, D.C.

May 1988

U.S. DEPARTMENT OF COMMERCE
C. William Verity, Secretary

National Oceanic and Atmospheric Administration
William E. Evans, Assistant Secretary for Oceans and Atmosphere

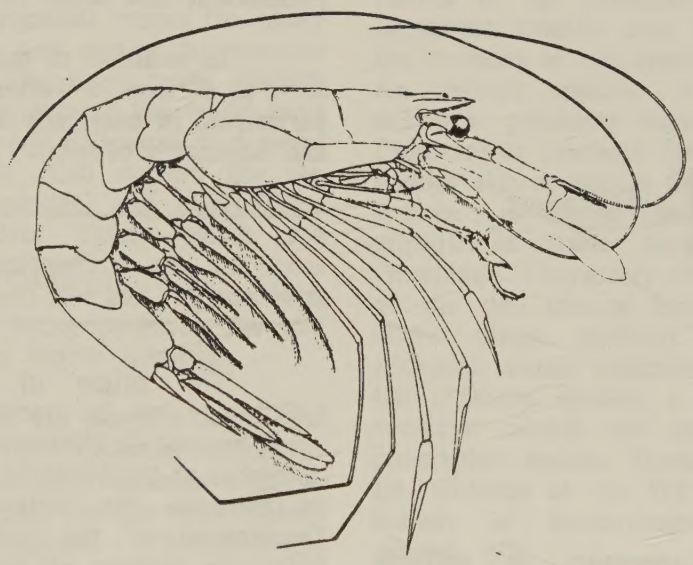
National Marine Fisheries Service
E. Charles Fullerton, Acting Assistant Administrator for Fisheries

Digitized by the Internet Archive
in 2025

https://archive.org/details/national-systematics-laboratory-annual-report_1988-05

## 1987 HIGHLIGHTS

- Received award from NMFS for "Best Paper" in the 1984 *Fishery Bulletin* for a monograph on the Spanish mackerels. A Systematics Laboratory paper on the rock shrimp genus *Sicyonia* received an "Honorable Mention" in the competition.
- Published an identification key, illustrated with color photographs, to lobster tails imported into U.S.
- Completed a draft of the gadiform (cods, haddocks, and their relatives) section for an ongoing revision of Bigelow and Schroeder's *Fishes of the Gulf of Maine*.
- Published monograph on Indo-west Pacific gamba prawns, genus *Pseudaristeus*, including a description of two new species.
- Completed first year of fieldwork in a study of the paralarval cephalopods of the Florida Current.
- Selected ichthyologist for research on flatfishes and clupeoids (herrings, anchovies, and their relatives).

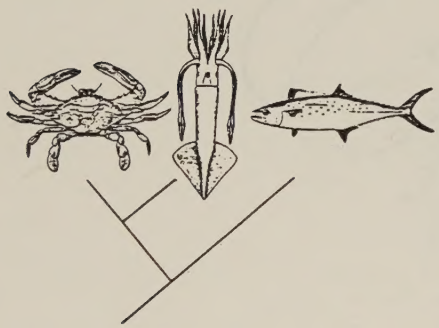


The Gamba Prawn,
*Pseudaristeus kathleenae*

## MISSION

The National Systematics Laboratory conducts taxonomic research on marine organisms of economic and ecological value to the United States. This involves describing and naming new species as well as revising existing names and descriptions based on new information. Since many species important to the United States are widespread or migratory, our research is world-wide.

Accurate taxonomic information is critical for the proper management of our nation's marine resources. Without a clear understanding of what individual species look like, where they live and what their names are, we cannot develop reasonable national fishing and conservation regulations, collect accurate statistics, set catch limits, or understand the behavior and ecology of these valuable species.



The Systematics Laboratory is actively involved in studying the taxonomy of fishes, crustaceans, squids and corals. We have a permanent staff of four scientists, a scientist emeritus, three technicians, a scientific illustrator, an administrative assistant, and a secretary. Additional personnel are occasionally assigned on a temporary basis.

Although a research unit of the Northeast Fisheries Center, National Marine Fisheries Service, we are located in the Smithsonian Institution's National Museum of Natural History in Washington, D. C. where we can take advantage of one of the world's leading systems of collections, libraries, equipment and facilities that are specifically designed for taxonomic and systematic research. The opportunity to meet and to communicate with other taxonomic experts who reside in or visit the Smithsonian helps to keep the staff of the National Systematics Laboratory current on the latest ideas and techniques in the field. As Smithsonian Research Associates, Systematics Laboratory scientists expand Smithsonian scientific capabilities and help build and curate Smithsonian collections.

The Systematics Laboratory has two major responsibilities, research and service. Our research produces two major products: 1) worldwide and regional taxonomic monographs, and 2) aids to identification.

The Systematics Laboratory serves many public as well as private institutions and individuals worldwide by providing expert identifications and information on species we study. We also review and comment upon manuscripts for scientific journals and for colleagues in the National Marine Fisheries Service, other agencies, and academia. Our staff evaluates proposals for the National Science Foundation and other research agencies.

In addition to these activities, staff members serve as officers of various scientific associations and participate in university affairs as research associates and adjunct professors.

## HISTORY

The origin of the National Systematics Laboratory can be traced back to August 15, 1942, when Samuel F. Hildebrand moved into the Division of Fishes of the National Museum of Natural History to continue his ichthyological research for the Department of the Interior's Bureau of Fisheries following merger of the Bureau of Fisheries fish collection with that of the U.S. National Museum. The Laboratory, then the National Center for Systematics, was transferred from the Department of the Interior to the National Oceanic and Atmospheric Administration in 1970 and renamed the National Systematics Laboratory. The Laboratory is presently administered by the Northeast Fisheries Center, National Marine Fisheries Service. It is responsible to the National Marine Fisheries Service Research Council and all four regional Fisheries Centers.

# RESEARCH

Fourteen papers were published by NSL scientists in calendar year 1987 (listed at end of this report). Research completed in 1987 and earlier has led to 25 more papers that are now in press or that are being reviewed. Major accomplishments in 1987 are listed below for each investigation.

## FISHES

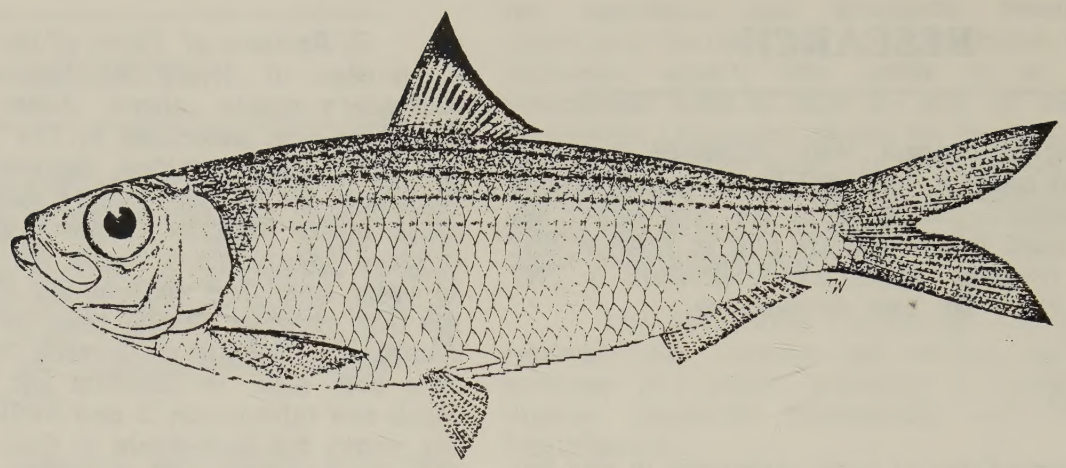
Pelagic fishes of great importance to man live in the highly productive surface layers of the ocean where species tend to grow large and range widely. Particular emphasis is devoted to studying the anatomy and systematics of scombroids, the group that includes the tunas, Spanish mackerels, bonitos, and mackerels. Although many of the species have been known for a long time and an extensive literature treats them, detailed anatomical descriptions and comparisons are few, incorrect scientific names have often been used, geographical ranges for many are not precisely delimited, and poorly documented classifications are current. The giant tunas, bonitos and Spanish mackerels found around the world have been treated by Dr. Collette and colleagues in a series of monographs and papers. Also studied are the halfbeaks (family Hemiramphidae) and needlefishes (family Belonidae), abundant fishes which are important forage items and which are of local commercial importance as food and bait. Monographs on these two families are being prepared for the series, Fishes of the western North Atlantic.

1. **Best paper award for spanish mackerel publication—** Dr. Bruce B. Collette, Director, received the award from the National Marine Fisheries Service for "Best Paper" in the 1984 *Fishery Bulletin*. The paper, entitled "Morphology, systematics, and biology of the Spanish mackerels (*Scomberomorus*, Scombridae)", by Drs. B. B. Collette and J. L. Russo, was published in volume 82, number 4 of the *Fishery Bulletin*. The monograph recognizes 18 species and contains detailed descriptions of external morphology, soft anatomy, and osteology. Numerous illustrations supplement the morphological sections of the paper. Species accounts include a synonomy, diagnostic characters, an illustration of the species, data on morphometrics and distribution, information on geographic variation, and a summary of biology and fishery interests. This revision should stabilize the nomenclature of the genus and help lay a foundation for the management of the Spanish mackerel fisheries.

2. **Revision of *Fishes of the Gulf of Maine*—** A revision of Henry B. Bigelow and William Schroeder's classic volume, *Fishes of the Gulf of Maine* has been undertaken by Drs. Bruce B. Collette and Grace Klein-MacPhee. Bigelow and Schroeder's publication in the 1953 *Fishery Bulletin* is a revision of an earlier work by Bigelow and Welsh in 1925. It seems appropriate to revise the 1953 book about 35 years later. This contribution is still useful and has been reprinted several times by the Museum of Comparative Zoology at Harvard. Numerous changes have been made in scientific and common names. Much new information is now available on the early life history and food-habits of Gulf of Maine fishes. New fisheries data will be added to replace some of the outdated information in the book. During 1987 the gadiform section, which is the largest section and includes some of the species most important to commercial fisheries along the northeastern coast of the United States, the cods, haddocks, and their relatives, was revised.

3. **Sand-lance taxonomy—** Preliminary results of an investigation on the taxonomy of northwest Atlantic sand lances (*Ammodytes*) indicate the presence of two species in the northwest Atlantic. An inshore species, *A. americanus* DeKay 1842, occurs in protected bays and estuaries ranging from Delaware to Labrador (published reports indicate this species also occurs in Chesapeake Bay). An offshore species, *A. dubius* Reinhardt 1838, is found in unprotected coastal waters from North Carolina to Greenland. Characters which support the distinctness of the two species include: number of vertebrae, lateral plicae, pectoral fin rays, and gill rakers. Although clinal variation is present, particularly in the offshore species, a combination of plicae and vertebral counts can separate the species in each geographic region. These results were presented by Dr. Collette at the 1987 meeting of the American Society of Ichthyologists and Herpetologists in Albany, NY.

4. **Visiting scientist publishes on clupeoids—** Dr. Thosaporn Wongratana, Faculty of Science, Chulalongkorn University, Bankok, worked for one year at the National Systematics Laboratory as a Smithsonian Post-Doctoral Fellow on a systematic study of the clupeoid fishes (herrings, sardines, and anchovies) of the Indo-Pacific. His first publication from this effort describes four new species from Australia. One species, *Herklotsichthys collettei*, is named after the Systematics Laboratory Director. A second publication resulting from his work at the Systematics Laboratory describes two new



*Herklotsichthys collettei*

species of Pacific anchovies. Dr. Wongratana's research results are of particular interest to the Honolulu Laboratory of the Southwest Fisheries Center and other Pacific fisheries managers because clupeoids are important as food and tuna bait.

5. **Ichthyologist selected for permanent staff**— After a worldwide search, Dr. Thomas A. Munroe was selected to be a Systematic Zoologist at the National Systematics Laboratory. Dr. Munroe completed both the B.S. and M.S. programs in Marine Biology at Southeastern Massachusetts University. His doctoral work was conducted at the Virginia Institute of Marine Science of the College of William and Mary and consisted of a systematic revision of Atlantic tonguefishes of the genus *Symphurus*. Along with publishing this and other previous projects, Dr. Munroe will participate in the ongoing revision of Bigelow and Schroeder's *Fishes of the Gulf of Maine* and will initiate systematic studies of clupeoid fishes (herrings, sardines, and anchovies) on a worldwide basis.

## CRUSTACEANS

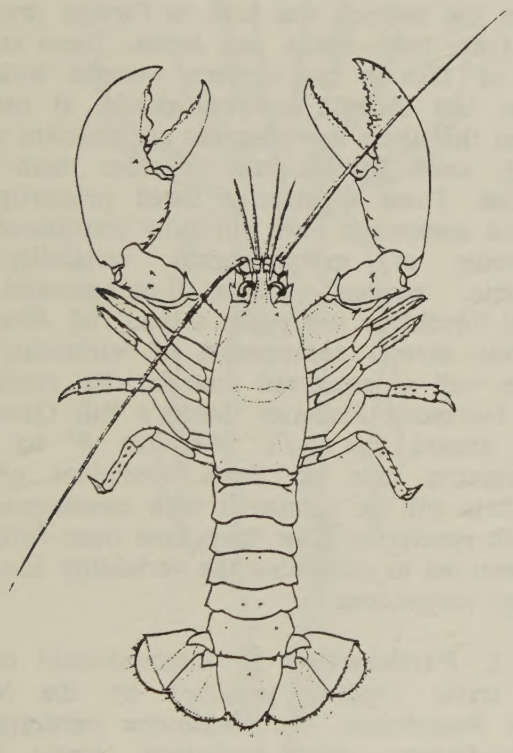
The groups of crustaceans most directly important to fisheries are the shrimps (mainly penaeoid species), lobsters and crabs. Research on shrimps in the National Systematics Laboratory is conducted by Dr. Isabel C. Canet (Pérez Farfante), and that on crabs, lobsters, and other decapods by Dr. Austin B. Williams.

The shrimp fishery is the most valuable single segment of the U.S. fishing industry. In 1987, domestic commercial landings amounted to 363,142,000 lbs (heads-on-weight) with a value of $578,084,000, and an additional 478,305,000 lbs (heads-off), with a value of $171,022,400, were imported. To satisfy this great demand, more species have been added to the list of commercially valuable shrimps during the last few years, and new beds have been exploited both in nearby and distant regions, in both shallow and deep waters. Wise management efforts and meaningful ecological and physiological studies require thorough knowledge of the systematics of these crustaceans.

Crabs and lobsters are among the most conspicuous animals in catches from heavily fished marine waters of the world. In combination, they yield about half of the tonnage of domestic U.S. crustacean fishery production and nearly half of its dollar value. In their adult phase they are prominent members of bottom communities, ranging from marshlands and estuaries through nearshore systems to the deep sea, and they occupy dominant positions in the biological communities where they live. A huge literature exists for some species that are seemingly well known, although questionably identified. Because of faulty, oversimplified descriptions, distribution ranges and community relationships of many such species may be poorly understood. Still other species have been lumped uncritically together, and many have never been recognized and described.

1. **Honorable mention for rock shrimp paper**— Dr. Isabel Pérez Farfante received an "Honorable Mention" in the "Best Paper" competition of the National Marine Fisheries Service for her paper entitled "The rock shrimp genus *Sicyonia*

(Crustacea: Decapoda: Penaeoidea) in the eastern Pacific". This monograph on the 12 species of rock shrimps was published in volume 83, number 1 of the 1985 *Fishery Bulletin*. It contains a key for identification of the species as well as descriptions and color notes. Information on reproduction, habitat, geographic range, and present or potential economic value of each species is also included. Until a few years ago, rock shrimps were discarded from large commercial catches in both the eastern Pacific and the western Atlantic. It was commonly thought that, because of their hard shells, they would be rejected by consumers and the processing industry; however, increased demand for shrimps encouraged fishermen and dealers to bring the larger of these species to market, and now the production is readily utilized.



The American Lobster
*Homarus americanus*

2. **Identification of spiny lobsters**— The average annual world catch of lobsters, 1975–82, was approximately 401 million lbs of which 45% were clawed lobsters, mainly from the North Atlantic, 18% were galatheids from the east Pacific, and 37% were spiny and flat lobsters from tropical, subtropical and southern temperate waters of the world oceans. Domestic landings of spiny lobsters averaged 6.0 million lbs annually, 1976–85; but that amount was dwarfed by imports during that period of 41.6 million lbs of frozen and canned meats of about 30 species, an amount representing approximately one–third of the average annual world landings for spiny lobsters. Many of these imports are difficult to identify because they consist of tails only; the remaining parts of the lobster bodies that provide many useful diagnostic characters are lacking. To allow customs inspectors, representatives of other regulatory agencies, and importers, to identify the imports properly (and to ascertain country of origin), Dr. A. B. Williams has published illustrated keys for the identification of all species of lobsters that are prominent in U. S. trade as well as species that have minor or potential commercial value. The keys and illustrations, some in color, help to identify the species as they may be seen in fresh or frozen state. The paper was published in the *Marine Fisheries Review*.

3. **Revision of the Gamba Prawn Genus *Pseudaristeus***— A monograph of the genus *Pseudaristeus* was published in the *Fishery Bulletin* by Dr. I. Pérez Farfante. This wide–ranging group includes six species; two of them were previously unknown to science and a third was known only as juveniles; five have commercial potential. The large series, obtained mostly from surveys by U.S. vessels in the Pacific, has made possible the assessment of taxonomic status and interrelationships of these prawns based on numerous new diagnostic characters.

4. **Common and scientific names of invertebrates**— An American Fisheries Society (AFS) Committee on Common and Scientific Names of Aquatic Invertebrates has been working for several years to foster preparation and publication of a list of names for North American invertebrates that will parallel the well–known AFS "List of common and scientific names of fishes for the United States and Canada", now in its fourth edition. The list of decapod crustaceans has now been completed, largely though the efforts of Drs. Austin B. Williams and I. Pérez Farfante.

5. **History of zoology in Hispaniola**— The late 18th century paintings of Haitian crustaceans and molluscs by M. de Rabié, Brigadier General and Chief Engineer for the northern part of Santo Domingo, have been identified and discussed by Dr. Austin B. Williams of the Systematics Laboratory and D. K. Wetherbee in one of a series of papers on the history of zoology in Hispaniola published privately by Wetherbee. Folios containing Rabié's marine paintings are housed in the Blacker–Wood Library of McGill University.

6. **Illustrated key to penaeoid shrimps of commerce in the Americas**— This work, by Dr. Pérez Farfante, is in press as *NOAA Technical Report NMFS* 64. Thirty-seven species of penaeoid shrimps, belonging to 12 genera and 4 families, are taken commercially in American waters. Nineteen of them occur in the Atlantic and 18 in the Pacific. The keys are based on characters, all depicted in five figures, that are most readily recognizable. To facilitate further the identification of species, a lateral view of an entire animal belonging to each of 10 genera is provided, and the cephalothorax as well as the genitalia (petasma and thelycum) of all of them are depicted. Accompanying the scientific names are the most frequently used vernacular names, the maximum length attained by members of each sex, and the geographic and bathymetric ranges.

7. **Hydrothermal-vent crustaceans**— Hydrothermal vents, cold brine and hydrocarbon seeps in the world oceans have become major foci of oceanographic discovery and research in the past 10 years. With the aid of increasingly sophisticated exploratory techniques and equipment operated by NOAA and other agencies, these features have come to be recognized as major components of spreading zones in the ocean floors. The vents have been in existence since very early in the earth's history, and through geological and biological processes have had a profound influence on oceanic waters. Through time, representatives of many organismic groups have adapted to unique systems of nutrition in these environments at depths beyond the reach of light, and among the groups represented are decapod crustaceans. From the first discovery of the vents, Dr. Williams has been describing decapods collected from them in a series of papers. One paper was published, one submitted, and another completed in the past year, and still others continue in preparation as discovery unfolds.

## SQUIDS

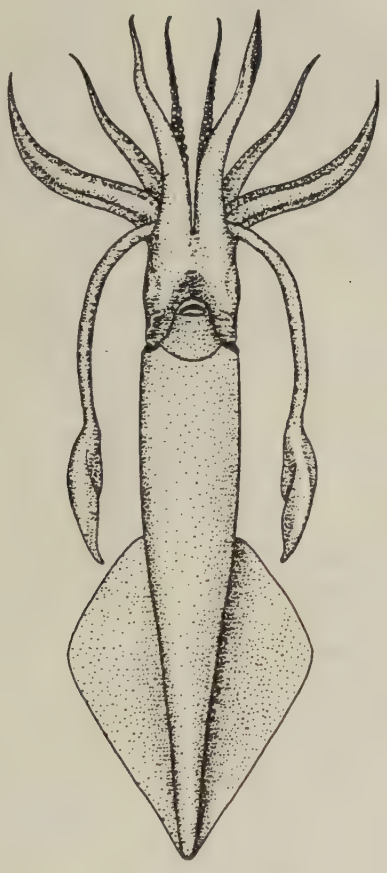
Squid fisheries, both in U.S. waters and worldwide, concentrate on species from two families, Loliginidae and Ommastrephidae. In the United States, these fisheries currently are primarily an export industry.

Loliginids include many species of demersal squids which attain medium to large sizes and which are both common and abundant on continental shelves. The loliginids in U.S. waters include species that are harvested commercially (23.1 million lbs from the east-coast U.S. fishery in 1987) but which are quite difficult to identify. Additionally, there are several other species of small loliginids found in U.S. waters. Generic relationships of the species are presently very confused. Four conflicting classification schemes have been proposed, based on single characters, on regional material, or on arguments that have been institutionalized in outdated literature. Because the diverse family Loliginidae is cosmopolitan, the only way to resolve relationships within it adequately is by a worldwide systematic review of the taxonomic characters. Dr. Michael Vecchione has undertaken such a review and will serve as Working Group Leader for Loliginidae at an upcoming workshop on cephalopod systematics, described below.

Commercially and ecologically, the most important ommastrephids in U.S. waters belong to the genus *Illex*. In 1987, the catch of *Illex* in U.S. waters was 22 million lbs, of which 15.1 million lbs were processed at U.S. plants and aboard U.S. freezer trawlers; the balance was sold to foreign processing vessels from Italy, Spain, and Japan. There are four groups of *Illex* in the western Atlantic which are more or less distinct morphologically. It has been proposed that these morphotypes are separate species, although some authors still consider them to be subspecies. These arguments, based primarily upon preserved specimens, have not fully considered other components of morphological variability (e.g. geographic, seasonal, sexual, ontogenetic). Dr. Michael Vecchione has begun a study of *Illex* which will treat several components of variability from fresh as well as preserved material. He participated in the Northeast Fisheries Center's Fall Groundfish Survey aboard the R/V *Albatross IV* to collect morphometric data on fresh specimens of *Illex*. Those data will be compared with measurements on the same specimens after they have been fully fixed and preserved to determine the variability introduced by these procedures.

1. **Participation in international cruise**— Using travel funding provided by the National Science Foundation, Dr. Vecchione participated in a squid-fishery cruise organized jointly by the University of Hawaii and Hokkaido University of Hakodate, Japan. The cruise, aboard Hokkaido University's Fisheries Training Ship *Hokusei Maru*, was planned primarily to investigate two phenomena related to the distribution of pelagic animals around the Hawaiian Islands. The first phenomenon is that high abundances of mature females of the large ommastrephid squid *Sthenoteuthis oualaniensis* are often found close to the windward side of Hawaii. A local fishery depends on this concentration of *S. oualaniensis*, which is found at lower abundances throughout the tropical Pacific, for bait in the

Hawaiian tuna fishery. The second phenomenon is that surprisingly large numbers of presumably midwater animals, including the enoploteuthid squid *Abralia trigonura*, appear to be associated with the sloping bottom near the islands. Data on life histories of both squid species were collected on this cruise. These data included abundance, distribution, sizes, sex, maturity, feeding, and incidence of parasites. While in Hawaii for this cruise, Dr. Vecchione began work on a systematic revision of the squid genus *Onychoteuthis*. This genus, which was long thought to comprise a few widespread species, now appears to include a number of complexes of several species each. While he was in Hawaii, Dr. Vecchione also presented a seminar at the Honolulu Laboratory of the Southwest Fisheries Center.



The Long-Finned Squid,
*Loligo pealei*

2. **Cephalopod workshop**— A member of the Cephalopod International Advisory Council (CIAC), Dr. Vecchione worked on the local committee organizing the International Workshop on the Systematics and Biogeography of Cephalopods. The workshop will be hosted by the Smithsonian Institution and held at George Washington University in Washington, DC, 11–25 July 1988. Thirty-four specialists in various aspects of cephalopod systematics have been invited to participate. The workshop is to be limited to invited experts (although an open, two-day symposium is planned at the conclusion of the workshop) to permit intensive "hands-on" work utilizing the collections of the National Museum of Natural History as well as specimens solicited from participants. The work will concentrate on families of cephalopods that are of economic significance or are important in oceanic biomass, food webs and predator-prey interactions, or major biomedical research. Another of Dr. Vecchione's responsibilities is to serve as Group Leader for the group working on the family Loliginidae and to organize preparations for the study of that family. The increased systematic understanding resulting from this workshop will measureably aid the research of fisheries biologists, cephalopod systematists, ecologists, behaviorists, and biomedical researchers.

3. **First year of fieldwork completed in study of paralarval cephalopods of the Florida Current**— Together with scientists from the Smithsonian Institution, Dr. Vecchione is studying the planktonic paralarvae of cephalopods in the Straits of Florida. The study, funded by the Smithsonian and conducted from the Smithsonian Marine Station in Fort Pierce, Florida, is planned to be a multi-year project. The first year of fieldwork consisted of five three-day cruises on the R/V *Sunburst*, completed in September. A second year of funding was approved by the Smithsonian. The Straits of Florida are believed to be an important spawning ground for the commercially important short-finned squid, *Illex illecebrosus*. The taxonomy of adult *Illex* presently is confused, and currently it is impossible to identify paralarval *Illex* to species. Similar problems exist for other cephalopod genera off Florida, including the long-finned squid *Loligo*. Therefore, growth series will be assembled from the fresh material collected for this project to determine characters important for paralarval identification. Furthermore, Vecchione and Roper (1986, *Proc. Biol. Soc. Wash.* 99(4):703–708) presented evidence of important small-scale distribution patterns of paralarval cephalopods in the vicinity of the shoreward edge of the Gulf Stream. Data from the Florida Current project will be used to determine how general and consistent these patterns are. The data include a transect of plankton stations perpendicular to shore, a vertical-distribution series, and concurrent high-resolution physical oceanographic data. Twenty-two species have been identified from the samples that have been sorted to date.

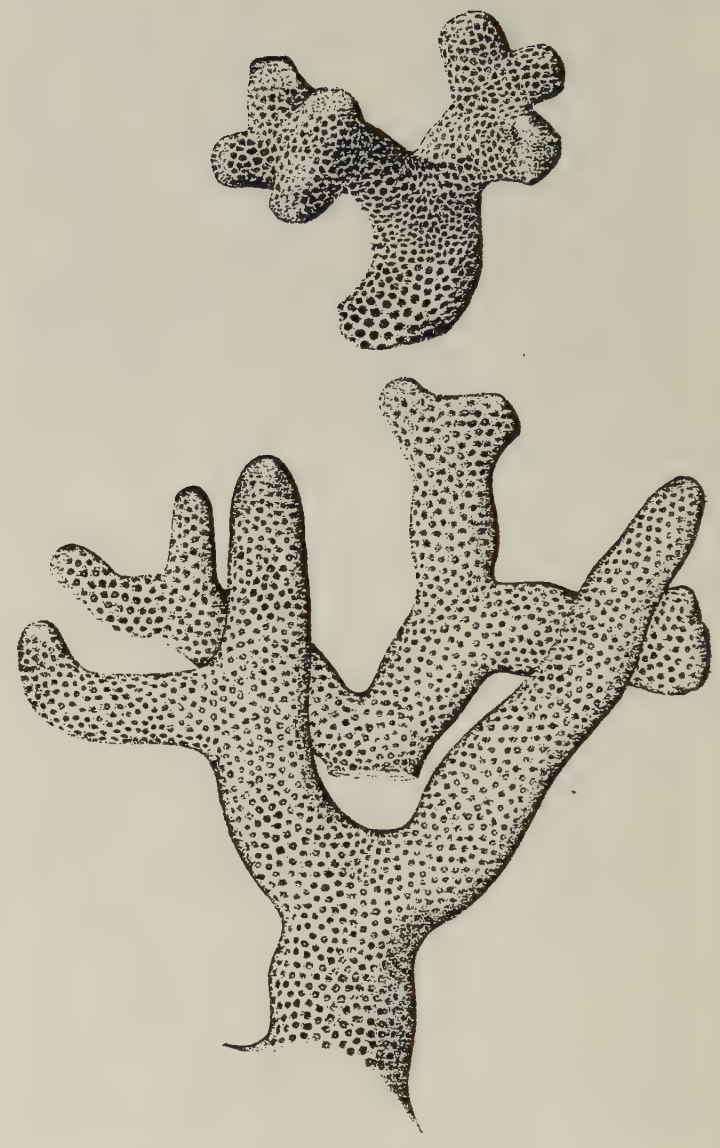
# CORALS

Corals and coral ecosystems are important sources of esthetic and recreational enjoyment, habitat for commercially harvested finfish and shellfish, material for curio items and objects d'art, and specimens for scientific and educational inquiry. Coral resources are subject to adverse effects associated with channel dredging, vessel anchoring and groundings, recreational diving, specimen collecting, commercial fishing, offshore oil and gas development, municipal and industrial waste outfalls, land runoff, and other human activities.

Threats to domestic coral resources pose difficult management problems which are currently addressed through a patchwork of state and federal regulatory and management programs. Foremost among these programs are those concerned with managing state and federal parks, marine sanctuaries, commercial fisheries, offshore mineral development, and coastal zone development.

Efficient management and regulation and accurate ecological and physiological research depend on a thorough knowledge of systematics. Early taxonomic workers had a restricted amount of material at their disposal and often based their designation of species on single specimens or, at most, a small series. They did not appreciate that the majority of corals show a considerable range of variations in skeletal characters. Thus, early taxonomic work led to an unnecessarily complicated situation that is still in the process of being disentangled today.

Corals of the genus *Porites* are among the most abundant species in the world and one of the most taxonomically confused. A NOAA Corps Officer detailed temporarily to the Systematics Laboratory, Lt. Cdr. Jameson, is studying skeletal variation in the Poritidae from Belize. This research is the first step in multidisciplinary research to clarify the taxonomy of the Caribbean and Atlantic Poritidae.



*Porites*

# SERVICE

The primary service functions of this Laboratory are to provide expert identifications for groups of fishes, crustaceans, squids and corals in which we specialize, and to furnish information on these animals. We assist visitors in the use of the national collections. We review manuscripts for scientific publications, for colleagues in NMFS, and other agencies. Finally, we assist staffs of the divisions of Fishes, Crustacea, Mollusks and Echinoderms with curation and loans, especially of material collected by NMFS.

IDENTIFICATIONS

| ORGANIZATION | CONTACT |
|---|---|
| Academy of Natural Sciences of Philadelphia | E. Böhlke |
| American Museum of Natural History, NY | G. Nelson |
| CSIRO Marine Laboratories, Australia | S. Blaber |
| Dauphin Island Sea Laboratory, AL | M. Dardeau |
| E.A. Science and Technology, Middleton, NY | B. Friedman |
| Fishery Office, Cook Islands | N. Sims |
| Gulf Coast Research Lab, Ocean Springs, MS | R. Heard, E. Otuos |
| Instituto de Oceanología, Havana | J. Martínez-Inglesias |
| McGill University, Redpath Museum | H. Reiswig |
| North Carolina State University | M. Moser, S. Reed |
| National Audubon Society | D. Holmquist |
| National Gallery of Art | G. Ravenel |
| National Geographic Society | L. McPhee |
| NMFS, NEFC, Gloucester Laboratory | R. Lundstrom, C. Martin |
| NMFS, Riverhead, NY | E. Hasbrouk |
| NMFS, Western Inspection Office, Bell, CA | T. Hansen |
| Oregon State University | A. Carey |
| Private Party | N. Fox |
| Royal Ontario Museum | R. Winterbottom |
| Scripps Institution of Oceanography | R. Rosenblatt |
| Sea Fisheries Institute, Gdynia, Poland | W. Pelczarski |
| Smithsonian Institution, Divisions of Fishes, Crustacea, and Mollusks and Oceanographic Sorting Center | numerous contacts |
| Steinitz Marine Biology Lab., Elat, Israel | A. Genin |
| UN Food and Agriculture Organization | M. Schneider |
| U.S. Army, Food Inspection, Ft. Knox, KY | M. Kessler |
| U.S. Army MEDDAC, Charleston, SC | M. Kessler |
| U.S. Customs Office, Boston, MA | R. Shrull |
| U.S. Fish and Wildlife Service | R. Laybourne |
| U.S. National Park Service, Homestead, FL | J. Holmquist |
| U.S. Naval Supply Center, Norfolk, VA | M. Kessler |
| Universidad Nacional Autónoma de México | M. Martinez, A. Salcedo |
| Universidad Santa Ursala, Brazil | M. Tavares |
| University of California, Irvine, CA | R. Griffis |
| University of North Carolina | F. Schwartz |

INFORMATION

| ORGANIZATION | CONTACT |
|---|---|
| Academy of Natural Sciences of Philadelphia | G. Davis |
| American Malacologists, Inc. | R. Abbott |
| Baltimore, MD | B. Jung |
| Bates College | Search Committee Chair |
| Caribbean West Imports, Glendale, CA | D. Clark |
| Clifford, Drake and Co., NY | A. Veren |
| CSIRO, Australia | T. Ward |
| Department of Environment, Annapolis, MD | J. Allison |
| Duchet Fancy Foods, NY | D. Bouchet |
| Empress International, Port Jefferson, NY | A. Stock |
| Erkins-Goss Seafood, Melrose, MA | M. Erkins |
| Gulf American Group, Chicago, IL | T. Reilly |
| Hoffman, International, Miami, FL | |
| IMEX Trading Corp., Austin, TX | K. Agbotpah |
| Internor, NY | J. Sidebothom |
| Private Collection, Jacksonville, FL | A. Romeu |
| Kent State University, OH | R. Feldman |
| King Faisel University, Saudi Arabia | W. Peters |
| Lamont Doherty Geological Observatory, NY | B. Hecker |
| Museum of Comparative Zoology, MA | K. Boss, J. McCarthy |
| Nagasaki University | Y. Natsukari |
| National Geographic Magazine | C. Hughes |
| National Geographic Society | C. Baldwin, L. McPhee |
| National Geographic World Magazine | E. Shanahan |
| New Yorker Magazine | R. Sax |
| NMFS, HQ | M. Tillman |
| NMFS, Inspection Services | T. Hansen, M. Kessler |
| NMFS, Fisheries Statistics Branch | S. Coplin |
| NMFS, Office of Trade and Indust. Serv. | S. Salapare |
| NMFS, NEFC Woods Hole, MA | J. Brownloe, G. Grace, J. Palmer |
| NMFS, NEFC Narragansett, RI | B. Burns |
| NMFS, SEFC Pascagoula, MS | C. Roithmeyer, D. Maher |
| North Carolina Dept. of Conservation | C. Lynch |
| North Carolina Dept. of Fisheries | K. West |
| Ocean Society, Washington, DC | M. Barber |
| Osprey Books | I. Dore |
| Port Elizabeth Museum | G. Ross |
| Private Citizen | E. Brothers |
| Ranger Rick Magazine | Editor |
| Robert Nathan and Assoc., Washington, DC | J. Krobl |
| Santa Barbara Museum, CA | F. Hochberg |
| Scripps Institution of Oceanography | M. Castellini |
| Seafood Dealer, Boston, MA | M. Erkins |
| Seafood Dealer, Kansas City, MO | M. Shaw |
| Smithsonian Institution | numerous contacts |
| Springfield High School, VA | B. Lai |
| Swisse Francais Trading, NY | C. Viana |
| Taiyo Food, Japan | R. Namry |
| Texas A&M University, TX | R. Tarply |
| Trade Winds International, Washington, DC | J. Burch |
| UN Food and Agriculture Organization | M. Schneider |
| US Customs Office, NY | A. Brady |

| | |
|---|---|
| US Customs Office, Patterson, NJ | E. Kellmer |
| US Dept. of Agriculture, San Francisco, CA | D. Sampson |
| US Peace Corps | B. Shelton |
| US Fish and Wildlife Service | N. Foster, J. Horwath |
| US Food and Drug Administration | M. Snyder |
| University of Arizona | R. Hong |
| University of California, Santa Barbara | V. Fabry |
| University of Hawaii | R. Young |
| University of Iowa | N. Foster |
| University of Maryland | J. Reznik |
| Virginia Institute of Marine Science | M. Castagna, G. Grant, M. Chittenden |
| Western Washington University | W. Summers |
| Woods Hole Oceanographic Institution | F. Carey, C. Van Dover |

MANUSCRIPTS REVIEWED

Reviews of 28 manuscripts were provided for:

Antarctic Biology Program
Atoll Research Bulletin
A book on cephalopod paleontology
Bulletin of Marine Science
Canadian Journal of Zoology
Contributions in Marine Science
Environmental Biology of Fishes
Fishery Bulletin
Journal of Crustacean Biology
Journal of Natural History
National Geographic Magazine
Nautilus
Southeast Fisheries Center
Pakistan Journal of Science and Industrial Research
Proceedings of the Biological Society of Washington
Transactions of the American Fisheries Society

Thirty one manuscripts were also reviewed for authors at their request.

RESEARCH PROPOSALS REVIEWED

Twenty one research proposals were reviewed for the following organizations.

American Society of Ichthyologists and Herpetologists (Raney Award Committee)
Louisiana Board of Regents
Louisiana State University (Sea Grant)
National Geographic Society
National Science Foundation, Biological Oceanography
National Science Foundation, Systematic Biology
National Marine Fisheries Service Northeast Fisheries Center
Smithsonian Institution
State of North Carolina
Texas A & M University

Additionally, two NSF proposals were reviewed at the request of the authors.

## PROFESSIONAL MEETINGS

### AMERICAN FISHERIES SOCIETY

Dr. Collette attended the annual meeting of the American Fisheries Society in Winston-Salem, NC.

### AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS

Dr. Collette presented a paper on sand lance (*Ammodytes*), and participated in the Board of Governors meeting as Past-President.

### 38TH ANNUAL TUNA CONFERENCE

Dr. Collette attended this meeting at Lake Arrowhead in May.

### ESTUARINE RESEARCH FEDERATION

Dr. Williams participated in a meeting of the Governing Board on June 18-19 in Washington. The Board worked on planning the biennial meeting program and drafting a slate of nominees for office, as well as on editorial and publication matters.

### AMERICAN SOCIETY OF ZOOLOGISTS

Drs. Collette and Williams attended the annual meeting of the American Society of Zoologists in New Orleans, Dec. 26-29. Dr. Williams attended sessions of the Crustacean Society and presented a co-authored paper on galathaeid egg size, Dr. Collette attended sessions of the Division of Vertebrate Morphology, and both attended sessions of the Society of Systematic Zoology. Dr. Williams is Secretary of the Society of Systematic Zoology and Dr. Collette is a member of the Council.

### ANTARCTIC MARINE LIVING RESOURCES

Dr. Vecchione attended the AMLR meeting in Washington, 15-16 April.

## UNIVERSITY AFFAIRS

### BERMUDA BIOLOGICAL STATION

Dr. Collette taught a four-week course, "Biology of Fishes," at the Bermuda Biological Station in August.

### NORTHEASTERN UNIVERSITY

Dr. Collette served as Adjunct Professor of Biology at Northeastern University.

### VIRGINIA INSTITUTE OF MARINE SCIENCE/ COLLEGE OF WILLIAM AND MARY

Dr. Vecchione presented an invited seminar on *in-situ* observations on the early life history of squids.

### HARVARD UNIVERSITY

Dr. Collette was reappointed as Research Associate in the Department of Ichthyology, Museum of Comparative Zoology, Harvard University.

## OTHER ACTIVITIES

### FISHERY BULLETIN

Dr. Collette continued as a member of the Editorial Committee and the Outstanding Publications Committee.

### SMITHSONIAN INSTITUTION

Dr. Collette served as Research Associate in the Department of Vertebrate Zoology, Drs. Canet, Williams, and Vecchione in the Department of Invertebrate Zoology. Dr. Williams served as a member of the Oceanographic Sorting Center Arthropod Advisory Committee. Dr. Collette represented organizations affiliated with the Smithsonian on the Senate of Scientists and participated in an advisory study for the proposed reorganization of the National Museum of Natural History. Dr. Vecchione was a requested participant in planning meetings for permanent facilities at the Smithsonian Marine Station at Link Port (Harbor Branch Foundation) in Fort Pierce, FL.

### AMERICAN ASSOCIATION FOR ZOOLOGICAL NOMENCLATURE

Dr. Collette served as President of the American Association for Zoological Nomenclature. Members of the Council are employed by agencies that rely on nomenclature in their research and service work - National Marine Fisheries Service; Fish and Wildlife Service; Parasitology and Systematic Entomology laboratories of the U.S. Department of Agriculture; National Museum of Natural History; and U.S. Geological Survey.

## BIOLOGICAL SOCIETY OF WASHINGTON

Dr. Williams served as President for 1986–87. He and Dr. Collette participated in Council meetings and the annual meeting. Dr. Vecchione also participated in the annual meeting.

## CEPHALOPOD INTERNATIONAL ADVISORY COUNCIL

Dr. Vecchione continued to serve as an elected member of the Council. As a member of the Recruitment Committee, he helped draft a position paper on recruitment studies for presentation to the United Nations Food and Agriculture Organization. Also, as a member of the local planning committee, he participated in planning for the upcoming International Workshop on the Systematics and Biogeography of Cephalopods.

## GULF ESTUARINE RESEARCH SOCIETY

Dr. Vecchione served as Vice President and Program Chairman for the Society.

## AMERICAN FISHERIES SOCIETY/CRUSTACEAN SOCIETY

Dr. Williams chaired a subcommittee of the Crustacean Society responsible for drafting a list of scientific and common names of decapod crustaceans from North America. Dr. Canet prepared the list of penaeoid shrimps. The list will be published by the American Fisheries Society to provide a checklist of species and to encourage acceptance of uniform common names. Common names are governed by no recognized codes, as are Latin names, and multiple synonyms or homonyms often exist among common names of species having special interest to man. The confusion which can result from these cases may be of little consequence locally, but in trade, for example, where Canadian and United States market or customs regulations apply, single adopted common names (official names) must be used for the purposes of unambiguous recognition.

## FISHES OF THE WESTERN NORTH ATLANTIC

Dr. Collette continued to serve as Chairman of the Editorial Board of this monographic series. The volume on eels was completed and will be published by the Sears Foundation in late 1988 or early 1989.

## JOURNAL OF CRUSTACEAN BIOLOGY

Dr. Williams continued a 5-year term as an associate editor.

## CYBIUM

Dr. Collette continued as a member of the editorial board of Cybium, Bulletin de la Societe Française d'Ichtyologie.

Larva of the Moorish Idol, *Zanclus cornutus*

# NATIONAL SYSTEMATICS LABORATORY PUBLICATIONS 1987

COLLETTE, B. B. 1987. Review: The systematics community. Copeia 1987(1):261–264.

Grier, H. J., and B. B. COLLETTE. 1987. Unique spermatozoa in testes of halfbeaks belonging to the genus *Zenarchopterus* (Teleostei: Hemiramphidae). Copeia 1987(2):300–311.

Johnson, G. D. and B. B. WASHINGTON. 1987. Larvae of the moorish idol, *Zanclus cornutus*, including a comparison with other larval acanthuroids. Bull. Mar. Sci. 40(3):494–511.

Nasci, R. S., S. G. F. Hare, and M. VECCHIONE. 1987. Habitat associations of mosquito and copepod species. J. Am. Mosq. Contr. Assoc. 3(4):593–600.

PEREZ FARFANTE, I. 1987. Revision of the gamba prawn genus *Pseudaristeus*, with descriptions of two new species (Crustacea: Decapoda: Penaeoidea). Fish. Bull., U.S. 85(2):311–338.

Wetherbee, D. K., and A. B. WILLIAMS. 1987. The late eighteenth century paintings by Rabié of Haitian mollusks and crustaceans. Further contributions on the history of zoology in Hispaniola, Art. 3:18–48. privately published, Shelburne, MA.

WILLIAMS, A. B. 1987. More records for species of shrimps, *Rimicaris* (Decapoda: Caridea: Bresiliidae) from the mid-Atlantic Rift. J. Crustacean Biol. 7(1):105

WILLIAMS, A. B. 1987. Lobsters—identification, world distribution, and U. S. trade. Mar. Fish. Rev. 48(2, for 1986):1–36.

WILLIAMS, A. B. 1987. A commensal mud shrimp from sponges in the western Central Atlantic (Decapoda: Upogebiidae). Proc. Biol. Soc. Wash. 100(3):590–595.

Wongratana, T. 1987. Four new species of clupeoid fishes (Clupeidae and Engraulidae) from Australian waters. Proc. Biol. Soc. Wash. 100(1):104–111.

Wongratana, T. 1987. Two new species of anchovies of the genus *Stolephorus* (Engraulidae), with a key to species of *Engraulis*, *Encrasicholina*, and *Stolephorus*. American Museum Novitates 2876:1–8.

Additionally, Dr. Vecchione published three papers during 1987 that were essentially completed before he joined the staff of the National Systematics Laboratory.

IN PRESS

COHEN, D. M. Families Argentinidae, Bathylagidae, Melanonidae, Moridae, Gadidae, and Bregmacerotidae. *In:* Check-list of Fishes of the eastern Tropical Atlantic. J. C. Quero, ed., UNESCO.

COLLETTE, B. B. Family Scombridae. *In:* Check-list of Fishes of the eastern Tropical Atlantic. J. C. Quero, ed., UNESCO.

COLLETTE, B. B. and K. W. Hartel. An annotated list of the fishes of Massachusetts Bay. NOAA Tech. Mem. NMFS-F/NEC-51

COLLETTE, B. B. and N. V. Parin. Families Belonidae and Hemiramphidae. *In:* Check-list of fishes of Eastern Tropical Atlantic. J. C. Quero, ed., UNESCO.

Hanlon, R. T., S. v. Boletzky, T. Okutani, G. Perez-Gandaras, P. Sanchez, C. Sousa-Reis, and M. VECCHIONE. Suborder Myopsida Orbigny, 1845. *In:* "Larval" and Juvenile Cephalopods. A Manual for Their Identification. S. v. Boletzky et al., eds.

PEREZ FARFANTE, I. Illustrated key to the penaeoid shrimps of commerce in the Americas. NOAA Tech. Rep. NMFS 64.

VECCHIONE, M. *In-situ* observations on a large squid-spawning bed in the eastern Gulf of Mexico. Malacologia.

VECCHIONE, M. Commercial fishing for butterfish in the Gulf of Mexico. Mar. Fish. Rev.

VECCHIONE, M. Variability in the distribution of late-stage oyster larvae in the Calcasieu Estuary. Contr. Mar. Sci.

WILLIAMS, A. B. Indo-Pacific spiny lobsters in the U. S. National Museum of Natural History,

collected from 1963 to 1981. Crustaceana.

WILLIAMS, A. B. Decapod and euphausiid crustaceans from outer continental shelf and upper slope of the eastern United States. Fish. Bull., U.S.

WILLIAMS, A. B. New marine decapod crustaceans from waters influenced by hydrothermal discharge, brine and hydrocarbon seepage. Fish. Bull., U.S. 86(2)

WILLIAMS, A. B. (Chairman) Common and scientific names of aquatic invertebrates from the United States and Canada. Decapod crustaceans. Am. Fish. Soc. Spec. Publ. 17.

Young, R. E., K. M. Mangold, and M. VECCHIONE. Family Enoploteuthidae Pfeffer, 1900. *In:* "Larval" and Juvenile Cephalopods. A Manual for Their Identification. S. v. Boletzky et al., eds.

COMPLETED MANUSCRIPTS

Tyler, J. C., G. D. Johnson, I. Nakamura, and B. B. COLLETTE . Morphology of *Luvarus imperialis* (Luvaridae) with a phylogenetic analysis of the Acanthuroidei (Pisces). (160 pp., plus 51 figs.)

Felley, J. D., M. VECCHIONE, G. R. Gaston, and S. M. Felley. Habitat selection by demersal nekton: Analysis of videotape data.

VECCHIONE. M. Long-term trends in the abundance of the copepod *Acartia tonsa* in the Calcasieu Estuary.

VECCHIONE, M. Zooplankton distribution in three estuarine bayous with different types of anthropogenic influence.

VECCHIONE, M. Zooplankton of the Calcasieu Estuary.

VECCHIONE, M. and V. A. Hand. Digestive-gland histology in paralarval squids (Cephalopoda; Loliginidae).

VECCHIONE, M. and K. L. Mayne. Larval distribution in an artificial estuary.

VECCHIONE, M., C. F. E. Roper, and M. J. Sweeney. Marine flora and fauna of the northeastern United States. Mollusca: Cephalopoda.

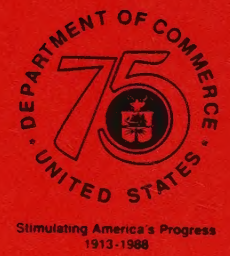
VECCHIONE, M., C. F. E. Roper, C. C. Lu, and M. J. Sweeney. Development, distribution, and relative abundance of paralarval cephalopods in the western North Atlantic.

WILLIAMS, A. B. Conjoined twin adult shrimp.

Van Dover, C., and A. B. WILLIAMS. Egg size in squat lobsters (Galatheoidea): Constraint and freedom.

# STAFF

| | |
|---|---|
| Bruce B. Collette | Laboratory Director and Ichthyologist |
| Isabel C. Canet (Pérez Farfante) | Carcinologist Emeritus |
| Austin B. Williams | Carcinologist |
| Michael Vecchione | Squid Biologist |
| Thomas A. Munroe | Ichthyologist (as of 1 December 1987) |
| Stephen C. Jameson | LCDR, NOAA Corps and Corallist (until 10 September 1987) |
| Ruth E. Gibbons | Museum Specialist |
| Martha Nizinski | Museum Specialist |
| Arleen S. McClain | Administrative Assistant and Secretary |
| Grace Klein-MacPhee | Fishery Biologist |
| Keiko H. Moore | Scientific Illustrator |
| Virginia R. Thomas | Secretary |
| Betsy B. Washington | Zoologist |
| Lori Beulah | Student Aide |


DEPARTMENT OF COMMERCE
75
UNITED STATES
Stimulating America's Progress
1913-1988